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59) are Crompton Oorang and his son, Rockley Oorang.

Practically all show dogs are placed at public stud, and any champion, thanks to the advertising his winnings give him, will be popular. The 53 champions who never sired a champion can not therefore be excused on the plea of lack of opportunity. They would certainly receive more bitches than a non-champion, unless this dog had made a great reputation as a sire.

The full table, showing the ancestry and get of all Airedale champions, and a similar one for Scottish terriers will be published in my forthcoming book on dog breeding.

WILLIAMS HAYNES

MITOSIS IN THE ADULT NERVE CELLS OF THE  
COLORADO BEETLE

IN a recent study of the development of the nerve cells through larval, pupal and adult stages in the honey bee, we had ample opportunity to note the method of division and growth. After the very early larval stages there is formed a regular mitotic figure in each multiplying nerve cell. These division figures are not equally abundant in all our material, which may account for the assumption that there is a rhythm in the normal growth of nerve cells. Mitosis does not stop at the end of the larval period, but continues for a time in the pupal stage. We have observed perfect mitotic figures in bees in the early pupal stages of metamorphosis. These figures are exactly like those occurring in the larval stages.

The larval life of the honey bee is relatively inactive, which affords an interesting contrast with the active existence of the common potato beetle. The results of this comparison will appear in a separate paper. While making the comparative study of the larval as well as pupal and adult stages in the growth of the nerve cells we noted in some of the adult material unmistakable evidence of nerve cell division. Close examination showed that there were many nerve cells in one animal dividing in the normal mitotic manner. Centrosomes, spindle fibers and astral rays were

all complete. The chromosomes were too compactly massed to be counted. In one field of the 2 mm. oil immersion objective we found six cells undergoing division. Others appeared in other parts of the ganglionic mass.

Our study upon the growth of the nerve cells in the honey bee and the potato beetle indicate that we may expect to find nerve cells regularly dividing by mitosis through the pupal and into adult life.

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SCIENTIFIC BOOKS

*Sigma Xi Quarter Century Record and History 1886-1911.* Compiled by HENRY BALDWIN WARD, Secretary of the Society of the Sigma Xi, with the assistance of the Chapter secretaries. University of Illinois. Urbana-Champaign. Pp. xii + 542.

A brief statement of the society whose achievements for a quarter of a century are given in the octavo volume which has just been published under the above title will perhaps best describe its importance.

In the early spring of 1886 the feeling that students of science who were not eligible to election in the well-known honor college fraternity, Phi Beta Kappa,<sup>1</sup> should organize a similar honor society to which those worthy followers of Agassiz, Darwin and Haeckel should be admitted was clearly recognized at more than one college, and especially at those universities where science was made an important feature of the curriculum.<sup>2</sup>

Accordingly, at Cornell University in November, 1886, the society of the Sigma Xi was

<sup>1</sup> Organized in 1776 at William and Mary College in Virginia.

<sup>2</sup> Let me call attention at this point to the fact that very early in the history of the School of Mines of Columbia University in New York those students who were able to enter the senior class without conditions were given the privilege of wearing the badge of crossed hammers in the course of mining engineering, and of the Liebig's potash bulbs in the chemical course.